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John G. Rauch, Reg. No. 37,218
Name of applicant, assignee or
Registered Representative

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#10
6-3-03

Our Case No. 1981/637

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Fred L. Starkey

Serial No. 09/758,668

Filing Date: January 11, 2001

For METHOD AND APPARATUS FOR COMMUNICATION OF DATA IN A REMOTE TIRE MONITORING SYSTEM

Examiner: D. Goins

Group Art Unit No. 2632

SUBSTANCE OF INTERVIEW

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Claims 1-23 are pending in the application. By an Amendment filed April 29, 2003, claims 1, 2, 3, 5 and 16 were amended following a telephonic interview on April 22, 2003 between the undersigned attorney for Applicant and Examiner Goins. An Examiner's Interview Summary was mailed April 28, 2003 stating that a formal written reply to the last office action must include the substance of the interview. Accordingly, Applicant submits the following.

During the interview, the patentability of claims 1-20 was discussed. It was explained that the inventor of the present application has discovered that each tire has a characteristic frequency response, for example, as illustrated in FIG. 3 of the patent application. By characteristic frequency response, it is meant that when electromagnetic energy is applied to the tire, some of the energy is absorbed or attenuated, some is passed relatively untouched or unattenuated. Frequencies where the energy is attenuated form attenuation bands; frequencies where the energy is unattenuated form passbands.

It was further explained that the inventor realized that this phenomenon can cause distortion and interference in transmission of tire data from a tire monitor mounted with the tire. To prevent this distortion, the tire monitor should transmit data at a frequency chosen in relation to the frequency response. That is, a frequency can be chosen which is known not to be substantially attenuated. Moreover, in some cases, the frequency response can be characterized ahead of time, for example, for a particular model of tire. Subsequently, for every tire of that model, a known good frequency can be used for transmission of tire data.

It was further explained that the Geschke reference specifies tire monitors that each transmit at an assigned frequency. Geshcke lacks any suggestion that the frequency is chosen in relation to a characteristic frequency response of the tire. Also, the Uhl reference discloses using the same wire for an antilock braking system (ABS) as for a tire monitor system. Uhl further discloses using a wire to each wheel for ABS and the tire monitor system, and, for example, stripping a coaxial cable bare to use as an antenna. Again, Uhl lacks any suggestion that the frequency is chosen in relation to a characteristic frequency response of the tire.

The examiner asserted that the subject matter defined by the claims could be clarified by explaining in the claims that some frequencies are passed and some are attenuated, as represented by the characteristic frequency response of the tire. It was agreed to make suitable amendments to the claims to make the necessary clarification.

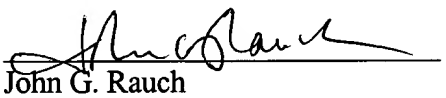
Accordingly, in the Amendment filed April 29, 2003, claim 1 was amended to clarify that a tire has a characteristic frequency response including passband frequencies and attenuation band frequencies. The transmitter employs a frequency chosen in relation to the passband frequencies of the characteristic frequency response. Claim 2 was amended to recite that the transmission frequency is one at which attenuation of transmitted power of a radio signal conveying the tire data is minimized. Claim 3 was amended to recite that the transmission

frequency is selected for either a particular tire or a model of tire. Similarly, claim 5 was amended to recite that the transmitter transmits in a passband of frequencies of the tire wherein radio frequency energy is relatively slightly attenuated.

Claim 16 recites a method for selecting frequencies for transmission for the tire monitor. This may be done by selecting a transmission frequency by using the frequency response of the tire to identify one or more frequencies having reduced attenuation of the radio transmissions and selecting the transmission frequency from among the one or more frequencies.

With this response, the application is believed to be in condition for allowance. Should the examiner deem a telephone conference to be of assistance is advancing the application to allowance, the examiner is invited to call the undersigned attorney at the telephone number below.

Respectfully submitted,



John G. Rauch
Registration No. 37,218
Attorney for Applicant

May 21, 2003
BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, ILLINOIS 60610
(312) 321-4200

2632

TRANSMITTAL LETTER			Case No. 1981/637
Serial No. 09/758,668	Filing Date January 11, 2001	Examiner D. Goins	Group Art Unit 2632
Inventor(s) Fred L. Starkey			
Title of Invention METHOD AND APPARATUS FOR COMMUNICATION OF DATA IN A REMOTE TIRE MONITORING SYSTEM			

TO THE COMMISSIONER FOR PATENTS

Transmitted herewith is Substance of Interview, and postcard evidencing receipt.

☐ Small entity status of this application under 37 CFR § 1.27 has been established by verified statement previously submitted.

☐ A verified statement to establish small entity status under 37 CFR §§ 1.9 and 1.27 is enclosed.

☐ Petition for a _____month extension of time.

☒ No additional fee is required.

☐ The fee has been calculated as shown below:

	Claims Remaining After Amendment		Highest No. Previously Paid For	Present Extra	Small Entity Rate	Small Entity Add'l Fee	or	Other Than Small Entity Rate	Other Than Small Entity Add'l Fee
Total	23	Minus	23	0	x $9=			x $18=	0
Indep.	6	Minus	6	0	x 42=			x $84=	0
First Presentation of Multiple Dep. Claim					+$140=			+ $280=	0
					Total add'l fee	$		Total add'l fee	$ 0

☐ Please charge Deposit Account No. 23-1925 (BRINKS HOFER GILSON & LIONE) in the amount of $_____. A duplicate copy of this sheet is enclosed.

☐ A check in the amount of $_____ to cover the filing fee is enclosed.

☒ The Commissioner is hereby authorized to charge payment of any additional filing fees required under 37 CFR § 1.16 and any patent application processing fees under 37 CFR § 1.17 associated with this communication or credit any overpayment to Deposit Account No. 23-1925. A duplicate copy of this sheet is enclosed.

☒ I hereby petition under 37 CFR § 1.136(a) for any extension of time required to ensure that this paper is timely filed. Please charge any associated fees which have not otherwise been paid to Deposit Account No. 23-1925. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

John G. Rauch
Registration No. 37,218
Attorney for Applicant
Customer No. 00757 - Brinks Hofer Gilson Lione

BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, ILLINOIS 60610
(312) 321-4200

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